

IABPA European Conference, Warsaw 2017.

Proposed presentation:

Development of a robust method for creating arterial bloodstain patterns.

A greater understanding of how blood behaves when ejected from a vessel under pressure will assist with interpretation of arterial bloodstain patterns and allow us to address questions such as; how far might blood be projected from an injury; how likely it is that an offender would be bloodstained; how much would clothing or covering of a wound reduce the extent of the blood projection?

We are using a medical training device consisting of a cardiovascular pump and vessel pads containing synthetic arteries ranging from 2 mm to 8 mm diameter and imbedded within synthetic human skin and tissue.

We will discuss our first steps in setting up this equipment to establish a reproducible and reliable mechanism to create arterial bloodstain patterns. We will also describe the results of our initial tests carried out using coloured water and progressing through to development of a synthetic blood substitute. We anticipate running trials using human blood in the near future and we hope to discuss the results of these trials at the conference.

We will also discuss how we are using the pump and “injured” vessels to create arterial bloodstain patterns to investigate a range of pattern features; maximal distances travelled by blood spots; extent of bloodstain patterns produced; size of blood spots; and pulsatile wave patterns. The effect of varying factors such as size of injury, artery diameter, covering of the wound, and the position of the vessel pad (horizontal or vertical) on the resulting patterns will then be assessed.

The research team

Research Student: Nathan Lidstone B.Sc.

A graduate in Forensic Science with Criminology now pursuing a Masters by Research in Science with a focus on Bloodstain Pattern Analysis.

- Student Member of the Chartered Society of Forensic Science 09/2013 – 01/2017
- Associate Member of the Chartered Society of Forensic Science 01/2017 – Present
- Associate Member of the IABPA 10/2016 – Present

Supervisor: Dr Jennifer Guest

Senior lecturer in Forensic Science at The University of Greenwich, UK.

Expert in Bloodstain Pattern Analysis

- Completed the 40 hour course in Advanced Bloodstain Pattern Analysis delivered by Paul Kish and Stuart James.
- Ten years' experience as a Reporting Scientist in the Serious Crime Directorate of the Metropolitan Police Service, London.
- Consultant and expert witness in Bloodstain pattern analysis
- Development of online CPD for solicitors in the field of BPA.
- Member of the International Association of Bloodstain Pattern Analysts.
- Professional member of the Chartered Society of Forensic Sciences.